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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/063,236

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Richard M. Webber

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7590

12/14/2004

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EXAMINER

MARTINEZ, JOSEPH P

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/063,236	WEBBER, RICHARD M.	
	Examiner	Art Unit	
	Joseph P. Martinez	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1-9-03</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al. (6017584) in view of Herb et al. (6693620).

Re claims 1-10, Albert et al. teaches for example in fig. 1, an electrophoretic medium comprising a plurality of particles (15) suspended in a suspending fluid (17), the particles being capable of moving through the fluid upon application of an electric field to the medium (col. 2, ln. 48-50), the fluid having dissolved or dispersed therein a polymer (col. 2, ln. 27-28) and the polymer is polyisobutylene (col. 14, ln. 55).

But, Albert et al. fails to explicitly teach the polymer being essentially non-absorbing on the particles; a number average molecular weight in excess of about 20,000; a number average molecular weight in excess of about 100,000; a number average

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molecular weight in the range of about 150,000 to about 3,000,000; a weight average molecular weight in excess of about 100,000; a weight average molecular weight in the range of about 300,000 to about 3,000,000; the polymer has a polydispersity index not greater than about 2; the polymer is a hydrocarbon polymer essentially free from aromatic groups; the polymer is a polyolefin; and the polyisobutylene has a viscosity average molecular weight in the range of about 200,000 to 1,200,000 g/mole.

However, within the same field of endeavor, Herb et al. teaches for example, the use of polyisobutylene and further suggests varying the molecular weight of polyisobutylene (col. 10, ln. 45-48).

Furthermore, it has been held that products of identical chemical composition cannot have mutually exclusive properties (see MPEP § 2112.02). Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658. Furthermore, the office interprets the teachings of the use of polyisobutylene to disclose the polymer being essentially non-absorbing on the particles since it is property of the claimed composition.

Still furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the molecular weight of the polymer, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Albert et al. with the

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polyisobutylene and varying the molecular weight of polyisobutylene as taught by Herb et al. in order to control particle-particle and particle-wall attraction.

Re claim 24, Albert et al. teaches for example in fig. 1, an electrophoretic medium comprising a plurality of particles (15) suspended in a suspending fluid (17), the particles being capable of moving through the fluid upon application of an electric field to the medium (col. 2, ln. 48-50), the fluid having dissolved or dispersed therein a polymer (col. 2, ln. 27-28) and the polymer is polyisobutylene (col. 14, ln. 55).

But, Albert et al. fails to explicitly teach the polyisobutylene has a viscosity average molecular weight in the range of about 400,000 to 1,200,000 g/mole and the polymer is present in an amount of from about 0.5 to about 2.5 percent by weight of the suspending fluid.

However, within the same field of endeavor, Herb et al. teaches for example, the use of polyisobutylene and further suggests varying the molecular weight of polyisobutylene (col. 10, ln. 45-48) and varying the concentration of polymer in the suspending fluid (col. 12, ln. 15-34).

Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the molecular weight and concentration of the polymer, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Albert et al. with the

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polyisobutylene and varying the molecular weight and concentration of polyisobutylene as taught by Herb et al. in order to control particle-particle and particle-wall attraction.

Re claim 28, Albert et al. teaches for example in fig. 1, an electrophoretic medium comprising a plurality of particles (15) suspended in a suspending fluid (17), the particles being capable of moving through the fluid upon application of an electric field to the medium (col. 2, ln. 48-50), the fluid having dissolved or dispersed therein a polymer (col. 2, ln. 27-28) and the polymer is polyisobutylene (col. 14, ln. 55).

But, Albert et al. fails to explicitly teach a polymer having an intrinsic viscosity of η in the suspending fluid and being substantially free from ionic or ionizable groups in the suspending fluid, the polymer being present in the suspending fluid in a concentration of from about $0.5 [\eta]^{-1}$ to about $2.0 [\eta]^{-1}$.

However, within the same field of endeavor, Herb et al. teaches for example, varying the concentration of polymer in the suspending fluid (col. 12, ln. 15-34).

Furthermore, it has been held that products of identical chemical composition cannot have mutually exclusive properties (see MPEP § 2112.02). Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658. Furthermore, the office interprets the teachings of the use of polyisobutylene to disclose the polymer being substantially free from ionic or ionizable groups and having an intrinsic viscosity since these are properties of the claimed composition.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the concentration of the polymer, since it has been

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held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Albert et al. with the polymer and varying the concentration of the polymer as taught by Herb et al. in order to control particle-particle and particle-wall attraction.

Re claim 11, Albert et al. further teaches for example, the polymer is a polysiloxane (col. 16, ln. 50-52).

Re claims 12 and 13, Albert et al. further teaches for example, the suspending fluid is an aliphatic hydrocarbon (col. 16, ln. 45) or a mixture (col. 16, ln. 24-26) of an aliphatic hydrocarbon and a halogenated hydrocarbon (col. 16, ln. 55).

Re claim 14, Albert et al. in view of Herb et al. teach the electrophoretic medium as disclosed above, including a suspending fluid, polymer and varying the molecular weight.

But, Albert et al. in view of Herb et al. fail to explicitly teach the suspending fluid and polymer are such that the scaling exponent for variation of intrinsic velocity with molecular weight falls in the range of about 0.55 to about 0.8.

However, the office interprets the intrinsic viscosity is intrinsic to the composition and that the prior art teaches the claimed composition. Furthermore, the prior art teaches

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varying the molecular weight. The office interprets the teachings of Albert et al. in view of Herb et al. to disclose varying the molecular weight of the polymer in regards to the suspending fluid, which has an intrinsic viscosity, to therefore teach a scaling exponent.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the scaling exponent for variation of intrinsic velocity with molecular weight fall within the range of about 0.55 to about 0.8, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Re claims 15 and 16, Albert et al. in view of Herb et al. teach the electrophoretic medium as disclosed above.

But, Albert et al. in view of Herb et al. fail to explicitly teach the polymer is present in an amount of from about 0.25 to about 2.5 percent by weight or from about 1 to about 2 percent by weight of the suspending fluid.

However, Herb et al. teaches for example, varying the concentration of polymer in the suspending fluid (col. 12, ln. 15-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Albert et al. in view of Herb et al. to include the polymer is present in an amount of from about 0.25 to about 2.5 percent by weight or from about 1 to about 2 percent by weight of the suspending fluid, since it has been held that where the general conditions of a claim are disclosed in the prior art,

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discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Re claim 17, Albert et al. further teaches for example in fig. 1, an electrophoretic medium is encapsulated (col. 7, ln. 15), with the suspending fluid (17) and particles (15) being retained within a plurality of capsules (13).

Re claim 18, Herb et al. further teaches for example, an electrophoretic medium is of a two-phase type, the suspending fluid and particles forming a discontinuous phase comprising a plurality of droplets, the droplets being surrounded by a continuous phase (col. 10, ln. 30-34).

Re claim 19, Albert et al. in view of Herb et al. teach the electrophoretic medium as disclosed above.

But, Albert et al. in view of Herb et al. fail to explicitly teach said droplets comprise at least about 40 percent by volume of the electrophoretic medium.

However, Herb et al. teaches for example, varying the concentration of polymer in the suspending fluid (col. 12, ln. 15-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Albert et al. in view of Herb et al. to include said droplets comprise at least about 40 percent by volume of the electrophoretic medium, since it has been held that where the general conditions of a

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claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Re claims 20 and 21, Albert et al. further teaches for example in fig. 1 and 2, an electrophoretic medium is of the dual particle type having two different types of particles (10 and 12) having different electrophoretic mobilities (col. 3, ln. 8-15) or the suspending fluid (17) and the two types of particles (10 and 12) being retained within a plurality of capsules (14).

Re claims 22 and 23, Albert et al. in view of Herb et al. teach the electrophoretic medium as disclosed above.

But, Albert et al. in view of Herb et al. fail to explicitly teach an image stability of at least about 1,000 seconds or about 10,000 seconds.

However, Albert et al. teaches for example, "whether or not an encapsulated electrophoretic display is bistable, and its degree of bistability, can be controlled through appropriate chemical modification of the electrophoretic particles, the suspending fluid, the capsule, and binder materials" (col. 6, ln. 43-47) and further teaches controlling the appropriate chemical modification of the electrophoretic particles (col. 12-15), the suspending fluid (col. 15-17), the capsule (col. 19 and 20), and binder materials (col. 22 and 23) and still further suggests stability times of hours or days (col. 6, ln. 32-35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to teach an image stability of at least about 1,000 seconds or about 10,000 seconds, since it has been held that where the general conditions of a claim

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are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Re claim 25, Albert et al. further teaches for example in fig. 1, at least one electrode (16 and 16') arranged adjacent the medium and capable of applying an electric field to the medium (col. 7, ln.26-30).

Re claim 26, Albert et al. further teaches for example in fig. 1, two electrodes (16 and 16') disposed on opposed sides of the electrophoretic medium, at least one of the electrodes being substantially transparent (col. 12, ln. 31-34) such that the electrophoretic medium can be viewed through the substantially transparent electrode (col. 12, ln. 39-40).

Re claim 27, Albert et al. further teaches for example in fig. 1, the suspending fluid (17) and particles (15) being retained within a plurality of capsules (13), the capsules being retained within a solid binder (11), and the electrode (16 and 16') being secured to the binder (col. 34-38).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph P. Martinez whose telephone number is 571-272-2335. The examiner can normally be reached on M-F 7:00 AM to 3:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
12-2-04


Hung Xuan Dang
Primary Examiner